LIST OF CLAIMS / AMENDMENTS

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Please cancel claims 2, 5, 11, 15, 23, 25, 37, 40, and 45 without prejudice. Claim 28 was previously canceled.

Please amend claims 1, 3-4, 6-10, 12-14, 16-22, 24, 26-27, 29-35, 39, 41-43, 46, and 50 as shown herein.

Claims 1, 3-4, 6-10, 12-14, 16-22, 24, 26-27, 29-36, 38-39, 41-44, and 46-58 are pending and are listed following:

1.   (currently amended)   Computer-readable   storage   media encoded with computer-executable instructions that implement a [[A]] visual query system, comprising:

query criteria of a query expression displayed as shapes that have a semantic relationship which represents logical associations between the query criteria, where a first shape of query criteria is displayed proximate a second shape of query criteria within a visual query definition that is bordered to define a Boolean association between the first shape and the second shape within the visual query definition;

~~a user interface configured to display a query result of the query expression;~~ ~~and~~

a query statement generator configured to:

determine ~~Boolean associations~~ the Boolean association corresponding to the semantic relationship of the shapes;

generate a SQL query statement for each shape of query criteria;

combine the SQL query statements according to the Boolean ~~associations~~ association to generate the query expression; ~~and~~

generate ~~the~~ a query result of the combined SQL query statements that form the query expression; and

a user interface configured to display the query result of the query expression.

2.   (canceled)

3. **(currently amended)** <u>Computer-readable storage media encoded with computer-executable instructions that implement the</u> [[A]] A visual query system as recited in claim 1, wherein [[a]] <u>the</u> first shape of query criteria is displayed proximate [[a]] <u>the</u> second shape of query criteria such that the first shape has an AND Boolean association with the second shape.

4. **(currently amended)** <u>Computer-readable storage media encoded with computer-executable instructions that implement the</u> [[A]] visual query system as recited in claim 1, wherein [[a]] <u>the</u> first shape of query criteria is displayed proximate [[a]] <u>the</u> second shape of query criteria within [[a]] <u>the</u> visual query definition such that the first shape has an AND Boolean association with the second shape within the visual query definition.

5. **(canceled)**

6. **(currently amended)** <u>Computer-readable storage media encoded with computer-executable instructions that implement the</u> [[A]] visual query system as recited in claim 1, wherein a first set of query criteria are displayed within ~~a first~~ <u>the</u> visual query definition, and wherein a second set of query criteria are displayed within ~~a second~~ <u>an additional</u> visual query definition, the first set of query criteria including the second set of query criteria such that the ~~second~~ <u>additional</u> visual query definition is displayed within the ~~first~~ visual query definition.

7. **(currently amended)** <u>Computer-readable storage media encoded with computer-executable instructions that implement the</u> [[A]] visual query system as recited in claim 1, wherein:

a first set of query criteria are displayed within ~~a first~~ <u>the</u> visual query definition <u>on the user interface</u>;

a second set of query criteria are displayed <u>on the user interface</u> within ~~a second~~ <u>an additional</u> visual query definition, the fist set of query criteria including the second set of query criteria such that the ~~second~~ <u>additional</u> visual query definition is displayed within the ~~first~~ visual query definition; and

the query statement generator is further configured to generate a first query result of the first set of query criteria and generate a second query result of the second set of query criteria such that the first query result and the second query result can be displayed as multiple query results.

8.   (currently amended)   <u>Computer-readable storage media encoded with computer-executable instructions that implement the</u> [[A]] visual query system as recited in claim 1, wherein an additional shape of query criteria is configured for display with the query criteria, and wherein the query statement generator is further configured to:

determine an additional Boolean association corresponding to the semantic relationship of the additional shape of query criteria;

generate an additional <u>SQL</u> query statement for the additional shape of query criteria;

combine the <u>SQL</u> query statements and the additional <u>SQL</u> query statement according to the additional Boolean association; and

update the query result of the combined <u>SQL</u> query statements and the additional <u>SQL</u> query statement.

9.   (currently amended)   <u>Computer-readable storage media encoded with computer-executable instructions that implement the</u> [[A]] visual query system as recited in claim 1, further comprising data tables that maintain data criteria, and wherein the query criteria is displayed in user-identifiable terms as metadata that correlates to the data criteria maintained in the data tables.

10.   (currently amended) Computer-readable   storage   media encoded with computer-executable instructions that implement the [[A]] visual query system as recited in claim 1, wherein the user interface is further configured to:

display criteria selections that include the query criteria within a criteria selection display on the user interface;

display the shapes of query criteria within [[a]] the visual query definition on the user interface; and

display the query result within the visual query definition on the user interface.

11.   (canceled)

12.   (currently amended)   Computer-readable   storage   media encoded with computer-executable instructions that implement a [[A]] visual query system, comprising:

a visual query definition displayed to associate query criteria of a query expression, the query criteria displayed as shapes within the visual query definition such that proximate positions of the query criteria define query criteria associations;

~~a user interface configured to display a query result of the query expression;~~ ~~and~~

a query statement generator configured to:

determine a query statement association for each display relationship of the query criteria;

generate a SQL query statement for each of the query criteria;

combine the SQL query statements according to the query statement associations to generate the query expression; and

generate ~~the~~ a query result of the combined SQL query statements that form the query expression for display in the visual query definition; and

a user interface configured to display the query result of the query expression within the visual query definition on the user interface.

13. **(currently amended)** <u>Computer-readable storage media encoded with computer-executable instructions that implement the</u> [[A]] visual query system as recited in claim 12, wherein the visual query definition is further displayed to associate the query criteria without logic operators connected between the query criteria.

14. **(currently amended)** <u>Computer-readable storage media encoded with computer-executable instructions that implement the</u> [[A]] visual query system as recited in claim 12, wherein the query statement generator is further configured to determine the query statement associations as a Boolean association for each display relationship of the query criteria.

15. **(canceled)**

16. **(currently amended)** <u>Computer-readable storage media encoded with computer-executable instructions that implement the</u> [[A]] visual query system as recited in claim 12, wherein a first query criteria is displayed proximate a second query criteria within the visual query definition such that the first query criteria has an AND query statement association with the second query criteria.

17. **(currently amended)** <u>Computer-readable storage media encoded with computer-executable instructions that implement the</u> [[A]] visual query system as recited in claim 12, wherein a first query criteria is displayed proximate a second query criteria within the visual query definition such that the first query criteria has an OR query statement association with the second query criteria.

18. **(currently amended)** <u>Computer-readable storage media encoded with computer-executable instructions that implement the</u> [[A]] visual query system as recited in claim 12, wherein the visual query definition is bordered to define a query statement association between a first query criteria displayed proximate a second query criteria within the visual query definition.

19. **(currently amended)** <u>Computer-readable storage media encoded with computer-executable instructions that implement the</u> [[A]] visual query system as recited in claim 12, further comprising a second visual query definition displayed to associate additional query criteria of the query expression, wherein:

the visual query definition includes the second visual query definition ~~such that the second visual query definition is~~ displayed within the visual query definition; and

the query statement generator is further configured to generate a second query result for the second visual query definition such that the query result and the second query result can be displayed as multiple query results.

20. **(currently amended)** Computer-readable storage media encoded with computer-executable instructions that implement the [[A]] visual query system as recited in claim 12, wherein the visual query definition is further displayed to associate additional query criteria, and wherein the query statement generator is further configured to:

determine an additional query statement association for a display relationship of the additional query criteria;

generate an additional SQL query statement for the additional query criteria;

combine the SQL query statements and the additional SQL query statement according to the additional query statement association; and

update the query result of the combined SQL query statements and the additional SQL query statements.

21. **(currently amended)** Computer-readable storage media encoded with computer-executable instructions that implement the [[A]] visual query system as recited in claim 12, wherein the user interface is further configured to:

display criteria selections that include the query criteria within a criteria selection display on the user interface; and

display the query criteria within the visual query definition on the user interface; and

display the query result within the visual query definition on the user interface.

22.   (currently amended)   Computer-readable   storage   media encoded with computer-executable instructions that implement the [[A]] visual query system as recited in claim 12, further comprising data tables that maintain data criteria, and wherein the query criteria is displayed in user-identifiable terms as metadata that correlates to the data criteria maintained in the data tables.

23.   (canceled)

24.   (currently amended)   Computer-readable   storage   media encoded with computer-executable instructions that, when executed, display a [[A]] user interface, comprising:

a criteria selection display of query criteria;

a visual query definition displayed to associate the query criteria of a query expression based on proximate positions of the query criteria in the visual query definition and without logic operators connected between the query criteria, each of the query criteria represented by a shape displayed within the visual query definition;

a display attribute of the visual query definition that defines a Boolean association of the query criteria represented by the shapes displayed within the visual query definition; and

a query result displayed within the visual query definition, the query result generated from a combination of one or more query statements that are combined to generate the query expression, the one or more query statements representing a shape of query criteria and the association of the query criteria.

25.   (canceled)

26.   (currently amended)   <u>Computer-readable   storage   media</u>
<u>encoded with computer-executable instructions that, when executed, display the</u>
[[A]] user interface as recited in claim 24, wherein the query criteria are drag-and-drop query criteria from the criteria selection display to the visual query definition.

27.   (currently amended)   <u>Computer-readable   storage   media</u>
<u>encoded with computer-executable instructions that, when executed, display the</u>
[[A]] user interface as recited in claim 24, wherein the visual query definition can be copied to create a second visual query definition for display on the user interface, and wherein the second visual query definition is redefined in an event that the visual query definition is redefined.

28.   (canceled)

29.   (currently amended)   <u>Computer-readable   storage   media</u>
<u>encoded with computer-executable instructions that, when executed, display the</u>
[[A]] user interface as recited in claim 24, wherein a color of the visual query definition defines the Boolean association of the query criteria represented by the shapes displayed within the visual query definition.

30. (currently amended) <u>Computer-readable storage media encoded with computer-executable instructions that, when executed, display the</u> [[A]] user interface as recited in claim 24, wherein a border of the visual query definition defines the Boolean association of the query criteria represented by the shapes displayed within the visual query definition.

31. (currently amended) <u>Computer-readable storage media encoded with computer-executable instructions that, when executed, display the</u> [[A]] user interface as recited in claim 24, wherein the one or more query statements are SQL query statements, and wherein the query result is generated from the combination of the one or more SQL query statements.

32. (currently amended) <u>Computer-readable storage media encoded with computer-executable instructions that, when executed, display the</u> [[A]] user interface as recited in claim 24, wherein a first shape of query criteria is displayed proximate a second shape of query criteria within the visual query definition such that the first shape has an AND query statement association with the second shape.

33. **(currently amended)** <u>Computer-readable storage media encoded with computer-executable instructions that, when executed, display the</u> [[A]] user interface as recited in claim 24, wherein a first shape of query criteria is displayed proximate a second shape of query criteria within the visual query definition such that the first shape has an OR query statement association with the second shape.

34. **(currently amended)** <u>Computer-readable storage media encoded with computer-executable instructions that, when executed, display the</u> [[A]] user interface as recited in claim 24, further comprising additional query criteria not associated with the visual query definition and displayed to indicate the non-association.

35. **(currently amended)** A method, comprising:

displaying query criteria of a query expression as shapes on a user interface<u>, the shapes having a semantic relationship which represents logical associations between the query criteria, the query criteria further displayed as a first set of query criteria within a first visual query definition, and as a second set of query criteria within a second visual query definition such that the first set of query criteria includes the second set of query criteria;</u>

determining a query statement association for each display relationship of the shapes of query criteria;

generating a <u>SQL</u> query statement for each shape of query criteria;

combining the <u>SQL</u> query statements according to the query statement associations to generate the query expression; and

displaying a query result of the query expression <u>on the user interface.</u>

36. **(original)** A method as recited in claim 35, wherein determining the query statement associations includes determining a Boolean association corresponding to each display relationship of the shapes of query criteria.

37. **(canceled)**

38. **(original)** A method as recited in claim 35, further comprising displaying criteria selections that include the query criteria in a criteria selection display on the user interface.

39. **(currently amended)** A method as recited in claim 35, further comprising generating the query result of the combined <u>SQL</u> query statements that form the query expression.

40. **(canceled)**

41. **(currently amended)** A method as recited in claim 35, wherein displaying the query criteria as shapes includes displaying a first shape of query criteria proximate a second shape of query criteria within [[a]] the first visual query definition such that the first shape has a Boolean association with the second shape.

42. **(currently amended)** A method as recited in claim 35, wherein displaying the query criteria as shapes includes displaying a first shape of query criteria proximate a second shape of query criteria within [[a]] the first visual query definition such that the first shape has an AND Boolean association with the second shape.

43. **(currently amended)** A method as recited in claim 35, wherein displaying the query criteria as shapes includes displaying a first shape of query criteria proximate a second shape of query criteria within [[a]] the first visual query definition that is bordered to define an OR Boolean association between the first shape and the second shape.

44. **(original)** A method as recited in claim 35, wherein displaying the query criteria includes displaying the query criteria in user-identifiable terms as metadata that correlates to data criteria maintained in data tables.

45. **(canceled)**

46. **(currently amended)** A method as recited in claim 35, further comprising:

adding additional query criteria as a shape on the user interface;

determining an additional query statement association for a display relationship of the additional shape of query criteria;

generating an additional <u>SQL</u> query statement corresponding to the additional shape of query criteria;

combining the <u>SQL</u> query statements and the additional <u>SQL</u> query statement according to the additional query statement association; and

updating the query result displayed on the user interface to include the additional query criteria.

47. **(original)** A method as recited in claim 46, wherein adding the additional query criteria includes dragging-and-dropping the additional query criteria on the user interface.

48. **(previously presented)** A method as recited in claim 35, further comprising generating an audible indication corresponding to at least one of a display of the query result on the user interface or an update of the query result displayed on the user interface.

49. **(previously presented)** One or more computer readable storage media comprising computer executable instructions that, when executed, direct a computing device to perform the method of claim 35.

50.   **(currently amended)**   One or more computer readable storage media comprising computer executable instructions that, when executed, direct a computing device to:

display a visual query definition to associate query criteria of a query expression, the query criteria displayed as shapes having display relationships within the visual query definition;

determine a query statement association for each shape of query criteria according to the display relationships;

generate a query statement for each shape of query criteria;

combine the query statements according to the query statement associations to generate the query expression; ~~and~~

generate a query result of the combined query statements that form the query expression; and ~~for~~

display the query result in the visual query definition on a user interface.

51.   **(previously presented)**   One or more computer readable storage media as recited in claim 50, further comprising computer executable instructions that, when executed, direct the computing device to determine the query statement association for each shape of query criteria as a Boolean association.

52.   **(previously presented)**   One or more computer readable storage media as recited in claim 50, further comprising computer executable instructions that, when executed, direct the computing device to generate the query statement for each shape of query criteria as a SQL query statement.

53. **(previously presented)** One or more computer readable storage media as recited in claim 50, further comprising computer executable instructions that, when executed, direct the computing device to display criteria selections that can be added to the visual query definition.

54. **(previously presented)** One or more computer readable storage media as recited in claim 50, further comprising computer executable instructions that, when executed, direct the computing device to display a first shape of query criteria proximate a second shape of query criteria within the visual query definition such that the first shape has a Boolean association with the second shape.

55. **(previously presented)** One or more computer readable storage media as recited in claim 50, further comprising computer executable instructions that, when executed, direct the computing device to display a first shape of query criteria proximate a second shape of query criteria within the visual query definition such that the first shape has an AND Boolean association with the second shape.

56. **(previously presented)** One or more computer readable storage media as recited in claim 50, further comprising computer executable instructions that, when executed, direct the computing device to display a first shape of query criteria proximate a second shape of query criteria within the visual query definition that is bordered to define an OR Boolean association between the first shape and the second shape.

57. **(previously presented)** One or more computer readable storage media as recited in claim 50, further comprising computer executable instructions that, when executed, direct the computing device to display a first set of query criteria within the visual query definition, and display a second set of query criteria within a second visual query definition such that the visual query definition includes the first set of query criteria and the second set of query criteria.

58. **(previously presented)** One or more computer readable storage media as recited in claim 50, further comprising computer executable instructions that, when executed, direct the computing device to generate an audible indication corresponding to an update of the query result displayed within the visual query definition.